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FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

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VILLAGE OF SAYBROOK

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RECONNAISSANCE STUDY

MAR 28 1985

CATALOGING = PREP.

Prepared By

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Champaign, Illinois

In cooperation with

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VILLAGE OF SAYBROOK
RECONNAISSANCE STUDY

INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flooding problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Flood Plain Management," and under Section 6 of Public Law 83-566. A plan of study was executed in October 1983 for reconnaissance studies for 15 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

This study was conducted and the report provided for the purposes of: 1) To evaluate needs for additional future studies, 2) To estimate average annual damages, 3) To provide an updated estimate of the 100 year floodplain and map, and 4) To provide guidance and recommendations to the community for improved floodplain management.

STUDY AREA DESCRIPTION

The village of Saybrook is located in McLean County, Illinois approximately 25 miles east of Bloomington. The 1980 census population of Saybrook was 882.

The Sangamon River flows through the west side of the village. Three small unnamed tributaries to the Sangamon originate above Saybrook and flow through the village to the river. These three tributaries are referred to in this report as East, Center, and West Tributaries. East Tributary has the largest drainage area, draining approximately 760 acres. Center Tributary drains 450 acres, and West Tributary drains 240 acres. The upper boundary of the Sangamon River Watershed is located approximately 12 miles to the west of Saybrook. By the time it reaches the village, the river has accumulated almost 46 square miles of drainage area. The hydrologic basin number is 07130006-010.

The area surrounding Saybrook and the entire Sangamon River Watershed is used almost exclusively for row crop production.

The soils in the Saybrook area are formed in loess and the underlying loam glacial till. There are three soil associations in the area.

Saybrook-Lisbon-Drummer Association.

This association makes up about 71 percent of the area. The soils formed under prairie vegetation in 20 to 40 inches of loess and the underlying loam till. Saybrook and similar soils make up about 45 percent of the association and have slopes ranging from 2 to 15 percent. The nearly level somewhat



poorly drained Lisbon and similar soils occupy about 30 percent of the association. The nearly level poorly drained Drummer soils occupy the other 25 percent of the association. Erosion on the sloping areas and a seasonally high water table on the nearly level areas are the main concerns in use and management.

Catlin-Flanagan Association.

This association makes up about 25 percent of the area. The soils formed under prairie vegetation in about four feet of loess and the underlying loam till. Catlin and similar soils make up about 75 percent of the association and have slopes ranging from 2 to 15 percent. The nearly level Flanagan soils occupy the other 25 percent of the association. Erosion is the main concern in use and management.

Birkbeck-Miami Association.

This association only makes up about 4 percent of the area and is around the town of Saybrook. The soils formed under woody vegetation in less than 20 inches (Miami) to more than 40 inches (Birkbeck) of loess and the underlying loam till. The Birkbeck and similar soils make up about 65 percent of the association and have slopes ranging from 2 to 15 percent. The other 35 percent of the association consists of Miami and similar soils that have slopes ranging from 10 to 20 percent. Erosion is the main concern in use and management.

Natural Values

This area is fairly typical of agricultural areas in central Illinois. The vast majority of the upland areas are tilled to produce row crops. The predominant practices do not provide a great amount of wildlife habitat. The creek channels are sometimes bordered by narrow grassed strips that, if managed correctly, can provide valuable habitat. Bottomlands that are frequently flooded are often left to grow in brush and trees while that flooded less frequently is generally tilled for row crop production. There are also a few scattered small patches of upland timber.

FLOOD PROBLEMS

The flooding problems in the village of Saybrook are related to two sources. The Sangamon River and the three tributaries all cause some flood damage. The flooding on the tributaries is generally related to severe thunderstorms that occur most frequently in the spring and summer months. The Sangamon River will have floods of varying magnitude occurring in virtually every month during the year. The flood damages suffered are a combination of overbank flooding, ponding areas, and basement seepage.

East Tributary enters the village just south of east Lincoln Street. It flows along the south edge of the SSS Farm Supply property then through a pasture area toward East Street and the New York, Chicago, and St. Louis railroad grade. It flows along the west edge of the landfill after crossing under the railroad then under south Main Street before joining the Sangamon. It was concluded that the smaller storms will not cause problems but a thunderstorm system delivering 4 to 5 inches in 24 hours would probably result in flood damage to SSS Farm Supply, a garage/she between East Street and the railroad. That large of a storm would also flood several acres of pasture and cropland possibly resulting in erosion of channels, overbank areas, and the road fill on the east Lincoln Street.

Center Tributary enters the developed area of the village near the corner of East and Grand Streets. It crosses under seven streets before crossing under the railroad west of Main Street. Within this reach, the channel makes several sharp bends and is fairly constricted between buildings. It has a very

narrow floodplain and steep channel gradient through the village, but large storms will undoubtedly affect several houses with basements. Just upstream of Main Street, an auto body shop is located in the floodplain. It was reported that water was over the top of cars in the lower level of this shop in June 1980.

West Tributary enters the village at the north corporate limit between Main and Cortland Streets. It flows through several residential properties crossing under Locust Street before entering the Sangamon River floodplain and joining the Sangamon River. It was concluded that small storms will cause little or no damage while large storm events may result in minor damages to yards and agricultural areas above the village and possibly contribute to seepage in basements of a few residences.

There are approximately 70 acres within the corporate limits of Saybrook that are in the Sangamon River floodplain. Although there are several businesses, residences and farm buildings that are close to the floodplain, it was estimated that only the gravel pit operation, VFW property, sportsman's club property, and one hog operation are damaged by river flooding. A reported 200 hogs were drowned during a Sangamon River flood in February 1979. A dike has been constructed along the east bank of the river south of the railroad with the intent of limiting damage to the VFW, sportsman's club, and hog operation. It is estimated that the dike would be effective in limiting damage to these properties from floods up to approximately the 10 percent chance (10 year) event. Floods of greater magnitude would overtop the dike and damage the properties listed above.

Several areas within the village have water problems from ponding areas. These areas occur where there are natural depressional areas or where development has obstructed natural drainage patterns. The result is generally shallow flooding or seepage problems in basements and crawl spaces. Two areas in particular were identified during the field review as having this problem. One was located northeast of the corner of Oak and Cortland Streets and the intersection of Locust and Main Streets.

Problem Summary

It is estimated that seven residences are presently located within the 1 percent chance (100 year) floodplain of the three tributaries. Two garages and two businesses are also within this floodplain.

Estimated average annual damage for these properties is as follows:

<u>Number of Structures</u>			<u>Total Value</u>	<u>Average Annual Damage</u>
<u>Residences</u>	<u>Businesses</u>	<u>Garages</u>		
7	2	2	\$580,000	\$7,400

In addition to the damage to the structures referred to above, an estimated \$2,000 damage occurs annually to roads and streets within the village due to flooding and ponding.

As stated previously, the Sangamon River floodplain contains the VFW, sportsman's club, and hog operation. It is estimated that approximately \$4,000 damage occurs annually to those properties. In addition, an estimated \$1,400

damage is suffered by landowners that farm the floodplain within the corporate limits. It is estimated that the gravel pit operation suffers little or no damage due to flooding.

Total estimated average annual damage to the village of Saybrook is \$14,800. Flooding starts at the 5-year frequency storm.

Existing Floodplain Management

The village of Saybrook is currently not regulating development in the floodplain. There is no existing floodplain delineation. The village is currently not enrolled in the National Flood Insurance Program.

RECOMMENDATIONS

It is recommended that the village enroll in the National Flood Insurance Program. This will make flood insurance available to all home and business owners in the village. It will require that the village pass an acceptable ordinance and regulate new development in the identified 1 percent chance floodplain. The floodplain map accompanying this report could be used for this purpose.

A significant amount of the flood damage in the floodplains along the three tributaries could be eliminated through installation of water, erosion and sediment control structures such as tile outlet terraces on the farmland above town. These practices have been shown effective in reducing peak discharges up to and including the 4 percent chance storm. Related land treatment practices such as conservation tillage or no-tillage could further reduce erosion and resulting sedimentation.

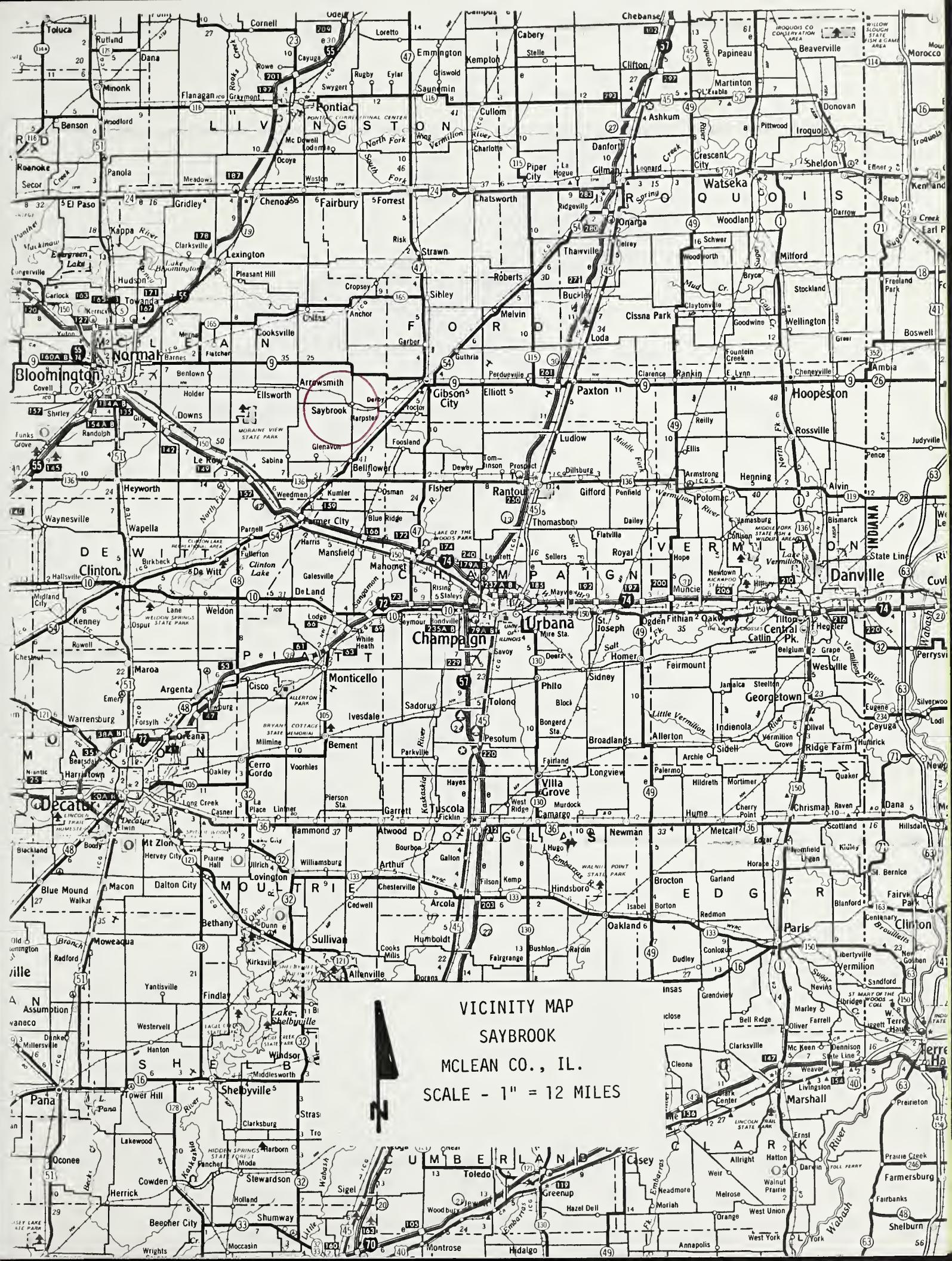
It is recommended that the VFW and sportsman's club remove all flood damageable contents or elevate them above expected flood heights.

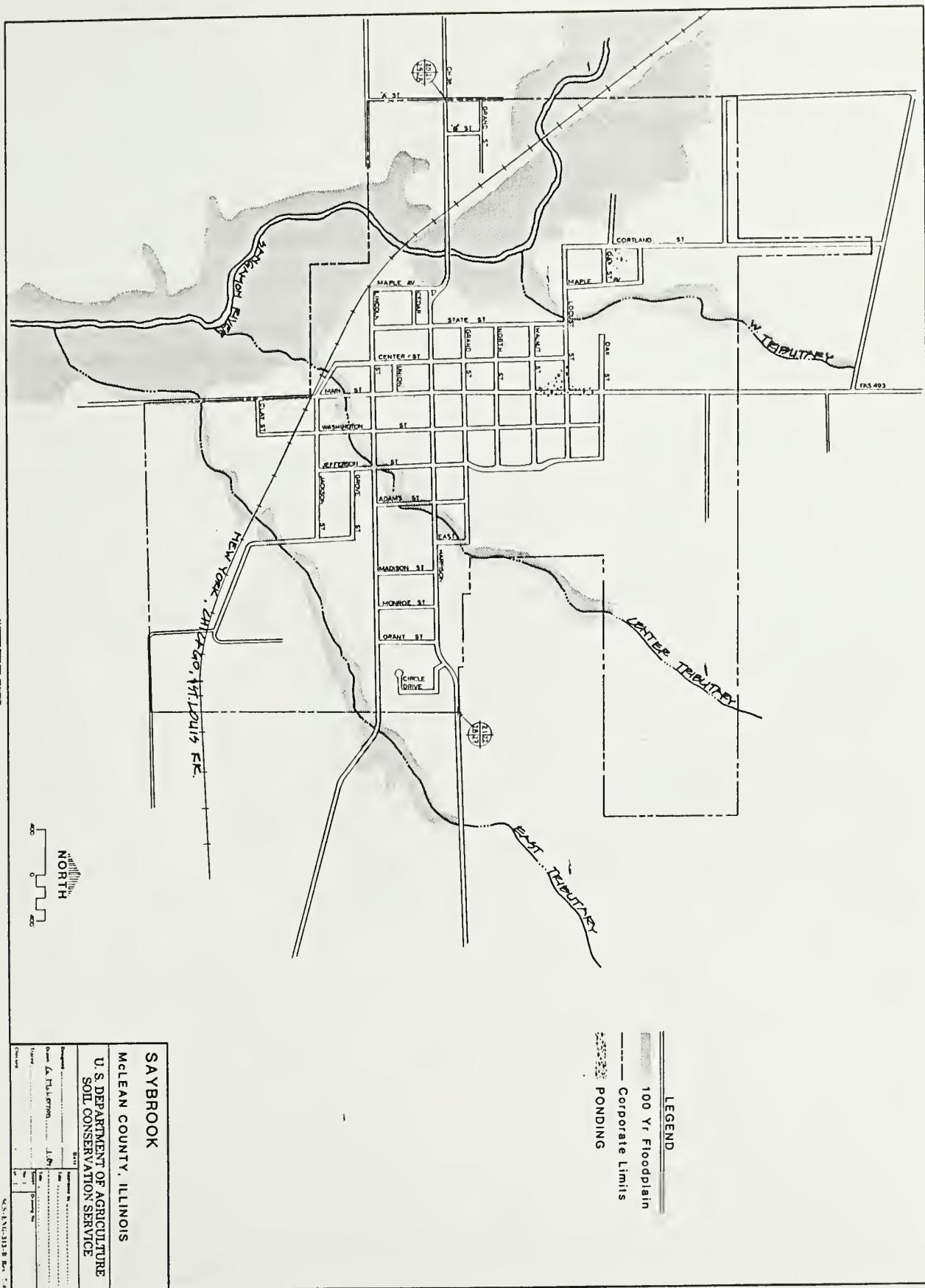
The only viable alternative available to protect the hog operation would be to effectively encircle the entire operation with a dike system. A less acceptable alternative might be to relocate the entire operation.

INVESTIGATION AND ANALYSIS

The inventory of flooding and water problems was based entirely on a field review and interviews with local citizens. No additional computations or profiles were made as a part of this study.

Damages were based on property values estimated during the field review. Damage factors as a percent of property values were applied to establish average annual damages. The factors have been developed during detailed floodplain management studies and are related to the frequency of damage for each property. Aerial photographs were provided by the Illinois Department of Transportation, Division of Water Resources.







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